

Morphological and molecular characterization of a distinct *Rhizophora* individual from Chilaw lagoon in Sri Lanka

Morphological characters and Randomly Amplified Polymorphic DNA (RAPD) markers were utilized for the detection and analysis of a *Rhizophora* individual with morphology distinct from *Rhizophora apiculata* and *Rhizophora mucronata*. Morphological data were taken from fifteen

plants of each species as available their *Rhizophora* species in Sri Lanka from each of the five sites selected (Chilaw lagoon, Rekawa lagoon, Dondra lagoon, Galle lagoon and Balapitiya, Maduganga) and from the anomalous tree. Five twigs were taken from each plant randomly at different heights of the plant. Both quantitative and qualitative characters were recorded.

The dendrogram of all morphological data indicated that individuals of *R. apiculata* and *R. mucronata* were clustered separately on two branches and the anomalous individual clustered with *R. apiculata*. Thirty 10-mer random primers which were obtained from Operon Technologies were screened, of which fifteen primers were selected to detect species specific molecular markers for *R. apiculata* and *R. mucronata* by using RAPD. The banding patterns of the anomalous tree were identical to that of *R. apiculata*. There were no species-specific bands of *R. mucronata* shared with the distinct tree.

Therefore, it was concluded that the anomalous individual is not a hybrid between the two *Rhizophora* spp., but belong to *R. apiculata*. The morphological differences could have arisen from other sources, such as a physiological disorder and pathological interaction. There is also a possibility that the anomalous *Rhizophora* tree could have been a result of a mutation that affects the vegetative morphology. Propagules of the individual will be planted and the offspring will be observed for the inheritance of the peculiar characteristics.